

REMARKS/ARGUMENTS

Claims 1-46 remain in the application for further prosecution.

Information Disclosure Statements

The Examiner did not return initialed Forms PTO-1449 from the Information Disclosure Statements dated January 17 and June 24, 2002, as copies of the references were not included. The Applicants have PTO-stamped postcards indicating receipt of the Information Disclosure Statements and references by the PTO on January 30 and July 2, 2002, respectively. Copies of the Information Disclosure Statements, references, and PTO-stamped postcards are enclosed. The Applicants respectfully request return of the initialed Forms PTO-1449 and acknowledgement that the references cited in the Information Disclosure Statements have been considered.

§ 112 Rejection

Claims 12, 27, 39 and 41 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 12, 27, 39 and 41 all claim an integrated circuit chip that includes a test signal buffer which acts as a current source for driving a test winding at a center frequency of each of the bandpass filters. The specification describes this subject matter as follows.

With the microprocessor in the test mode, test signal buffer 106 acts as a current source driving a test winding 45 (FIG. 1a) of the di/dt sensor with a sharply rising and falling edge square wave at each of the center frequencies of the bandpass filters, namely 20 KHz (when used), 33 KHz and 58 KHz in turn.

Page 10, line 30, through page 11, line 2. It is the Applicant's belief that this sufficiently enables one of ordinary skill in the art to make or use the invention. It is well known in the art to use test signal buffers to drive test windings. The claim also specifies at which frequency the test signal buffer is to operate. Thus, it is the Applicants' belief that this rejection has been overcome.

§ 102 Rejections

Claims 1-3, 5-7, 10, 11, 16-18, 20-23, 25, 26, 28-30, 32-35, 37 and 38 were rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 6,259,996 to Haun et al. ("Haun").

§ 103 Rejections

Claims 4, 19 and 31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Haun in view of U.S. Patent No. 4,792,899 to Miller.

Claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Haun in view of U.S. Patent No. 5,774,555 to Lee et al. ("Lee").

Claims 9, 24, 36 and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Haun in view of U.S. Patent No. 6,054,887 to Horie et al.

Claims 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Haun in view of U.S. Patent No. 5,784,020 to Inoue.

Claims 14 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Haun in view of U.S. Patent No. 5,224,006 to MacKenzie et al. ("MacKenzie").

Claims 42-46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Haun in view of U.S. Patent No. 6,185,732 to Mann et al.

Claim 1

Claim 1 was rejected under 35 USC § 102(a) as being anticipated by Haun. Haun is directed to an arcing fault detection system for detecting electrical faults in an electrical distribution system by monitoring one or more conductors and producing an input signal. The arcing fault detection system includes a circuit "for analyzing said input signal to determine the presence of broadband noise in a predetermined range of frequencies, and producing a corresponding output signal." Column 2, lines 9-12. Haun also discloses a microcontroller 40 connected to an ASIC 30. Column 3, lines 43-51. The microcontroller 40 makes a decision, based on the signal from the ASIC 30, whether to send a trip signal to an output 42. *Id.* Haun does not disclose placing the microcontroller 40 on the ASIC 30.

Claim 1 recites a circuit for analyzing a sensor signal to determine the presence of broadband noise in a predetermined range of frequencies and producing a corresponding output signal. The system of claim 1 also includes "a controller for processing said sensor signal and said output signal to determine . . . whether an arcing fault is present." In claim 1, the microcontroller and the circuit are integrated onto a single ASIC ("said circuit for analyzing and said controller are integrated onto a single . . . ASIC"). Haun does not teach or disclose placing the microcontroller on the ASIC with the analyzing circuit. Thus, claim 1 should not be found to be anticipated by Haun.

Claims 2, 3, 5-7, 10 and 11 were rejected under 35 USC § 102(a) as being anticipated by Haun. Claims 2, 3, 5-7, 10 and 11 all depend from claim 1 and, thus, are believed to be allowable for the same reasons set forth above with respect to claim 1.

Claims 4, 8, 9, 13-15, 41 and 44 were rejected under 35 USC § 103 as being obvious over Haun in view of various references. None of the references cited disclose a single chip containing both a controller and a circuit for analyzing. Since all of these claims depend on claim 1, and contain all of the limitations of claim 1, these claims should be found to be allowable.

Furthermore, many of these claims are also allowable for other reasons. For example, claim 8 was rejected under 35 USC § 103 as being unpatentable over Haun in view of Lee. Claim 8 is dependent on claim 7 which, in turn, is dependent on claim 6, which is dependent on claim 1. The Examiner relies on Haun to teach all of the features of claims 1, 6 and 7. Lee is directed to detecting a pilot signal for discriminating a broadcasting state of a two-carrier multi-sound broadcast receiver using a switched capacitor bandpass filter. Column 1, lines 5-9.

Regarding this claim, the Examiner has failed to establish a *prima facie* case of obviousness. In order for a *prima facie* case of obviousness to be made, all of the elements of the claimed invention must be disclosed. The combination of Lee and Haun does not disclose all of the elements of claim 8. Specifically, there is no teaching in Lee of combining a bandpass filter and an AND gate for ANDing outputs to a counter on a single chip. If one were to combine Lee with Haun, the result would be a chip having the elements of Haun and a separate component for the bandpass filter of Lee and another component including the clock of Lee. As illustrated in FIG. 5 of Lee, the clock and the bandpass filter are separate components and there is no teaching or suggestion that they should be included on a single chip.

Also, a *prima facie* case of obviousness regarding claims 14 and 15 has not been established. Claims 14 and 15 were rejected as being obvious over Haun in view of MacKenzie.

MacKenzie discloses a ground fault circuit using an integrated chip having a dormant oscillator and utilizing external sensing coils 17 and 19 for detecting a ground fault. Column 3, lines 55-68. There is, however, no motivation or suggestion in either of the references to combine the ground fault circuit on the same chip as the controller and the circuit for analyzing a sensor signal for the presence of broadband noise. In fact, MacKenzie teaches away from providing the ground fault circuit on a single chip with other circuits. MacKenzie discloses two circuits, a ground fault circuit and a line-to-neutral circuit. These circuits are not located on a single chip. As shown in FIG. 2, MacKenzie's chip 47 includes the dormant oscillator. Line 118, which is outside the chip 47, leads to the line-to-neutral circuit 25. Thus, MacKenzie explicitly teaches that the dormant oscillator should be located on a separate chip from the other components. For these reasons, claims 14 and 15 should be found to be nonobvious.

Claim 16

Claim 16 was rejected under 35 USC § 102(a) as being anticipated by Haun. Claim 16 is directed to a method for determining whether arcing is present in an electrical circuit in response to a sensor signal. The method includes analyzing a sensor signal and processing the sensor signal on a single chip. Haun does not disclose using a single ASIC chip to both analyze a sensor signal and process the sensor signal. Thus, claim 16 should not be found to be anticipated by Haun.

Claims 17, 18, 20-23, 25 and 26 were all rejected under 35 USC § 102(a) as being anticipated by Haun. Claims 17, 18, 20-23, 25 and 26 all depend from claim 16 and, thus, are believed to be allowable for the same reasons set forth above with respect to claim 16.

Claims 19, 24, 40 and 42 were rejected under 35 USC § 103 as being obvious over Haun in view of various references. None of the references disclose using a single chip to analyze a sensor signal and process the sensor signal. Since all of these claims depend on claim 16, and contain all of the limitations of claim 16, these claims should be found to be allowable.

Claim 28

Claim 28 was rejected under 35 USC § 102(a) as being anticipated by Haun. Claim 28 is directed to a system for determining whether arcing is present in an electrical circuit in response to a sensor signal, the system including, on a single chip, a means for analyzing the sensor signal to determine the presence of broadband noise and a means for processing the sensor signal. The circuit of Haun described above is analogous to the means for analyzing the sensor signal and the microcontroller is analogous to the means for processing the signal. As stated above, however, Haun does not disclose putting both of these devices on a single ASIC, as required by claim 28. Therefore, claim 28 should not be found to be anticipated by Haun.

Claims 29, 30, 32-35, 37 and 38 were rejected under 35 USC § 102(a) as being anticipated by Haun. Claims 29, 30, 32-35, 37 and 38 all depend from claim 28 and, thus, are believed to be allowable for the same reasons set forth above with respect to claim 28.

Claims 31, 36, 40, 43 and 46 were rejected under 35 USC § 103 as being obvious over Haun in view of various references. None of these references disclose a means for analyzing a sensor signal and a means for processing the sensor signal on a single application specific integrated circuit chip. Since all of these claims depend on claim 16, and contain all of the limitations of claim 28, these claims should be found to be allowable.

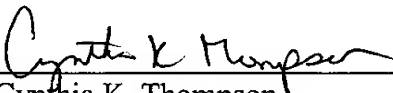
Conclusion

It is the Applicants' belief that all of the claims are now in condition for allowance and action towards that effect is respectfully requested.

If there are any matters which may be resolved or clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at the number indicated.

Respectfully submitted,

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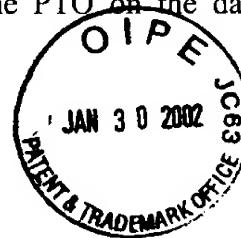


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In re Applicants: Dvorak et al.
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The following documents were received in the PTO on the date stamped below:

1. Information Disclosure Statement;
2. Form PTO-1449 and references; and
3. Acknowledgment Postcard.



DOCKETED

INIT. JS DATE: 2-18-02
ACTION: Comp ^{TPS} DATE: 1-30-02

